

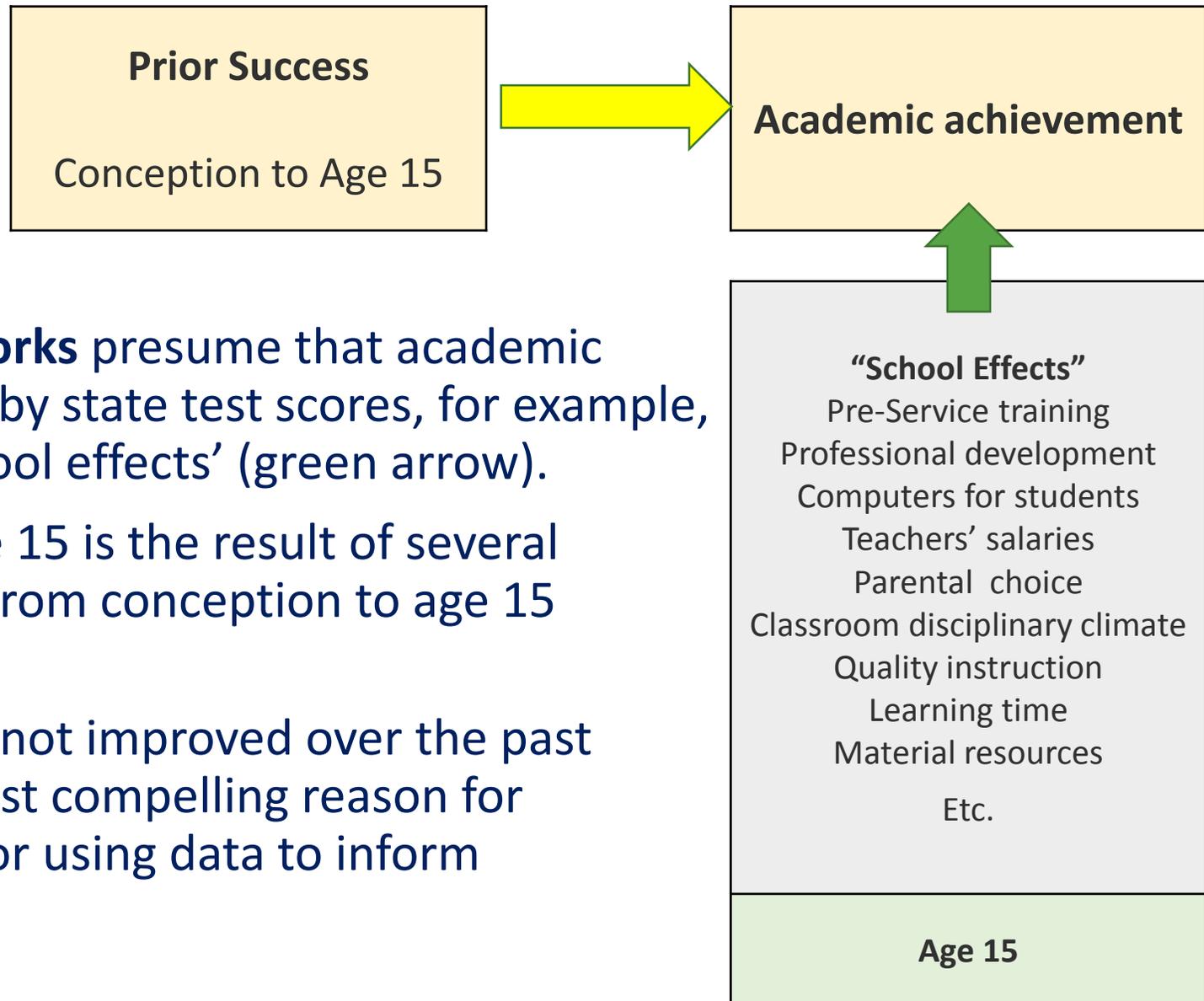
# Educational Prosperity:

## A Life-Course Approach

**J. Douglas Willms**

The Learning Bar



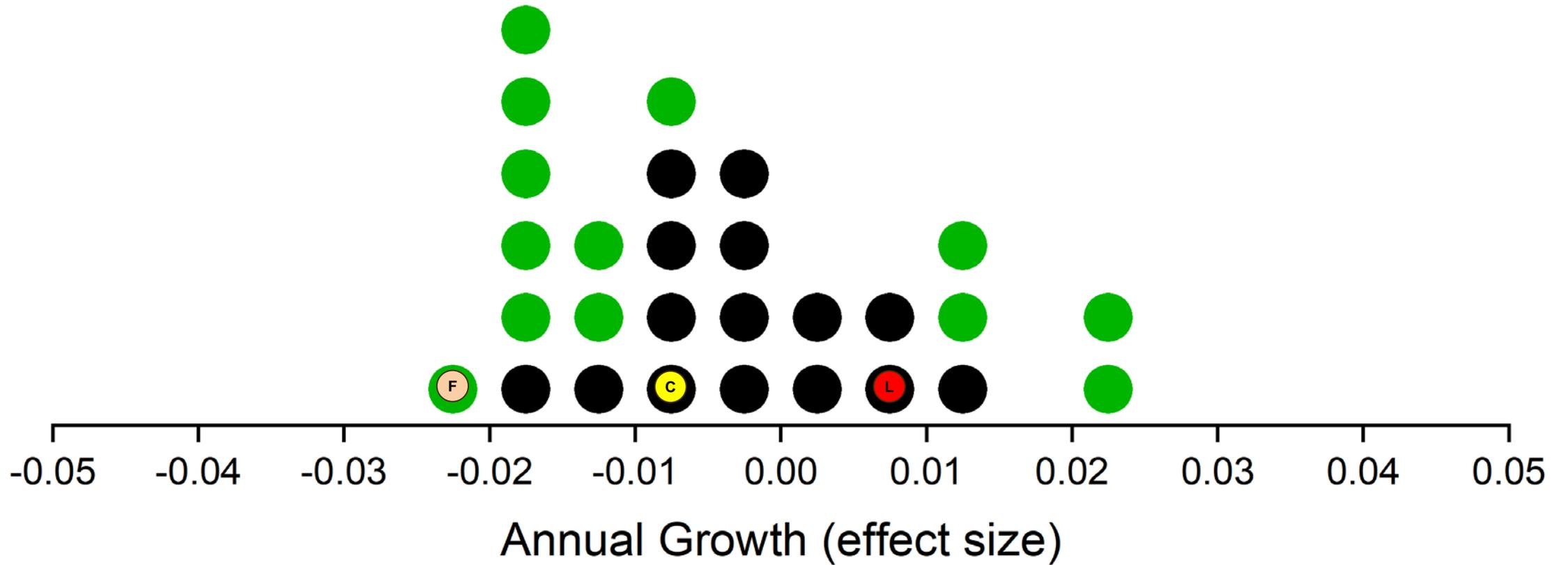


**Current assessment frameworks** presume that academic achievement, as measured by state test scores, for example, are the direct result of ‘school effects’ (green arrow).

However, achievement at age 15 is the result of several factors along the life path, from conception to age 15 (yellow arrow)

Students’ reading skills have not improved over the past fifteen years. This is the most compelling reason for adopting a new approach for using data to inform educational policy.

# Annual Growth in PISA Reading Scores, 2000-2015



# Prosperity Outcomes and the Foundation for Success

- **Educational Prosperity includes a core set of metrics for success at six key stages of development across the life-course from conception to adolescence.**
- **These metrics include a set of key outcomes for each developmental stage, called ‘prosperity outcomes,’ and a set of family, institutional, and community factors, called ‘foundations for success,’ which drive the prosperity outcomes.**
- **The approach considers four ways that success accumulates over the life-span.**



**PRE-NATAL**



**EARLY DEVELOPMENT**  
Ages 0 - 2



**PRE-PRIMARY**  
Ages 3 - 5



**EARLY PRIMARY**  
Ages 6 - 9



**LATE PRIMARY AND LOWER SECONDARY**  
Ages 10 - 15



**UPPER SECONDARY**  
Ages 16 - 18

**Prosperity Outcomes**

- Healthy pregnancy
- Healthy delivery

- Language development
- Cognitive development
- Physical development
- Self-regulation

- Awareness of self and environment
- Social skills and approaches to learning
- Language development
- Cognitive development
- Physical development

- Educational attainment
- Reading literacy
- Numeracy
- Health and well-being
- Engagement

- Educational attainment
- Academic achievement
- Health and well-being
- Engagement

- School completion
- Ethical citizen
- Leadership skills
- Health and well-being
- Communication and interaction skills

**Foundations for Success**



**Family Factors**

- Nutrition
- No exposure to toxins
- Mother's physical health
- Mother's emotional health

- Breast-feeding and nutrition
- Mother's physical health
- Mother's emotional health
- Parenting skills
- Intra-family relations

- Parenting skills
- Intra-family relations
- Family involvement

- Parenting skills
- Intra-family relations
- Family involvement

- Parenting skills
- Intra-family relations
- Family involvement

- Parenting skills
- Intra-family relations
- Family involvement



**Institutional Factors**

- HEALTH-CARE FACILITY:**
- Prenatal care
  - Primary health care

- HEALTH-CARE FACILITY:**
- Post-natal care
  - Primary health care

- PRE-SCHOOLS:**
- Child-centered
  - Goal-oriented
  - Opportunities to socialize

- SCHOOLS:**
- Safe and inclusive
  - Quality instruction in code and language skills
  - Learning time
  - Material resources

- SCHOOLS:**
- Safe and inclusive
  - Quality instruction
  - Learning time
  - Material resources

- SCHOOLS:**
- Safe and inclusive
  - Quality instruction
  - Opportunity to learn life and career skills
  - Material resources



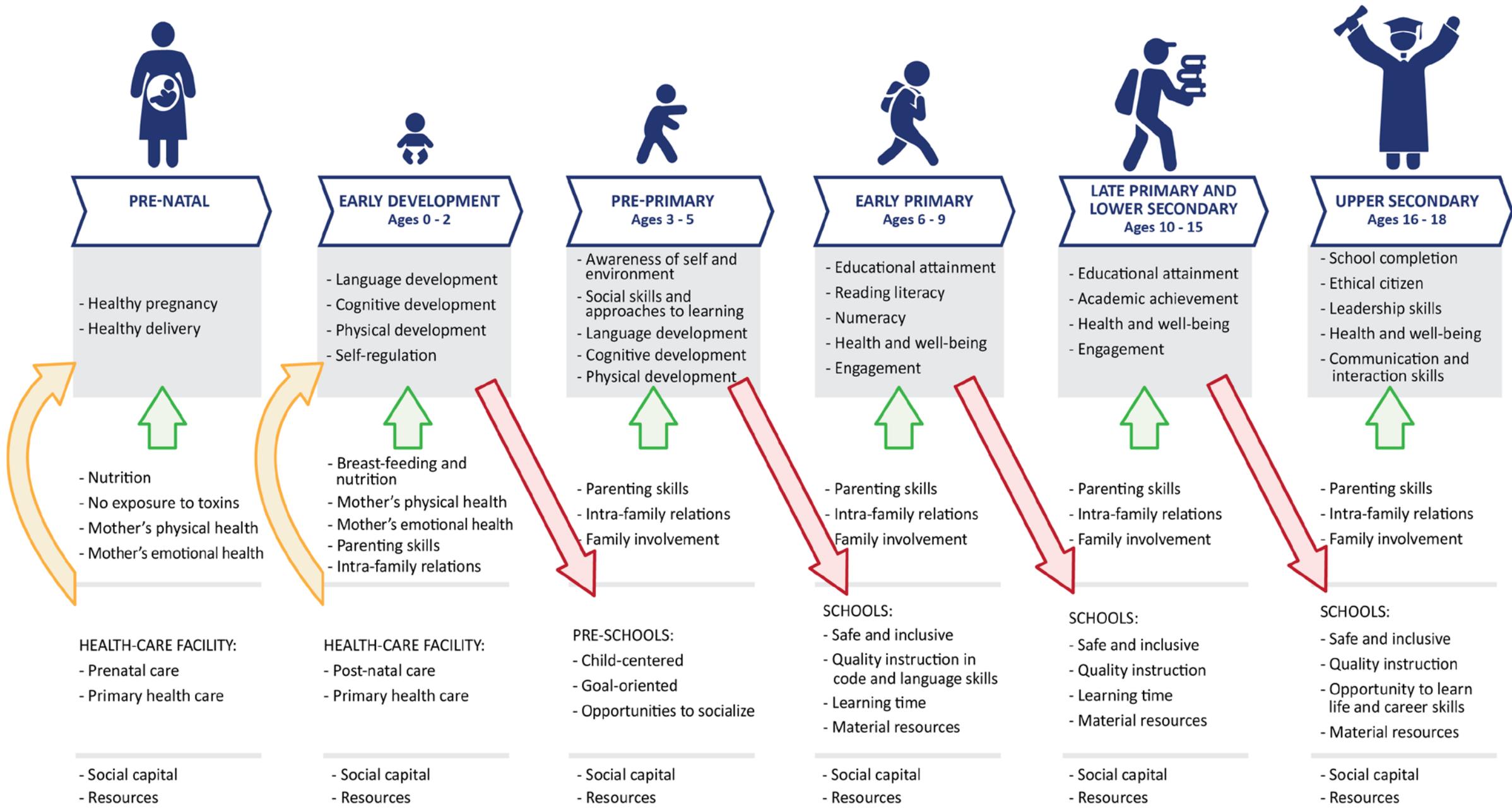
**Community Factors**

- Social capital
- Resources

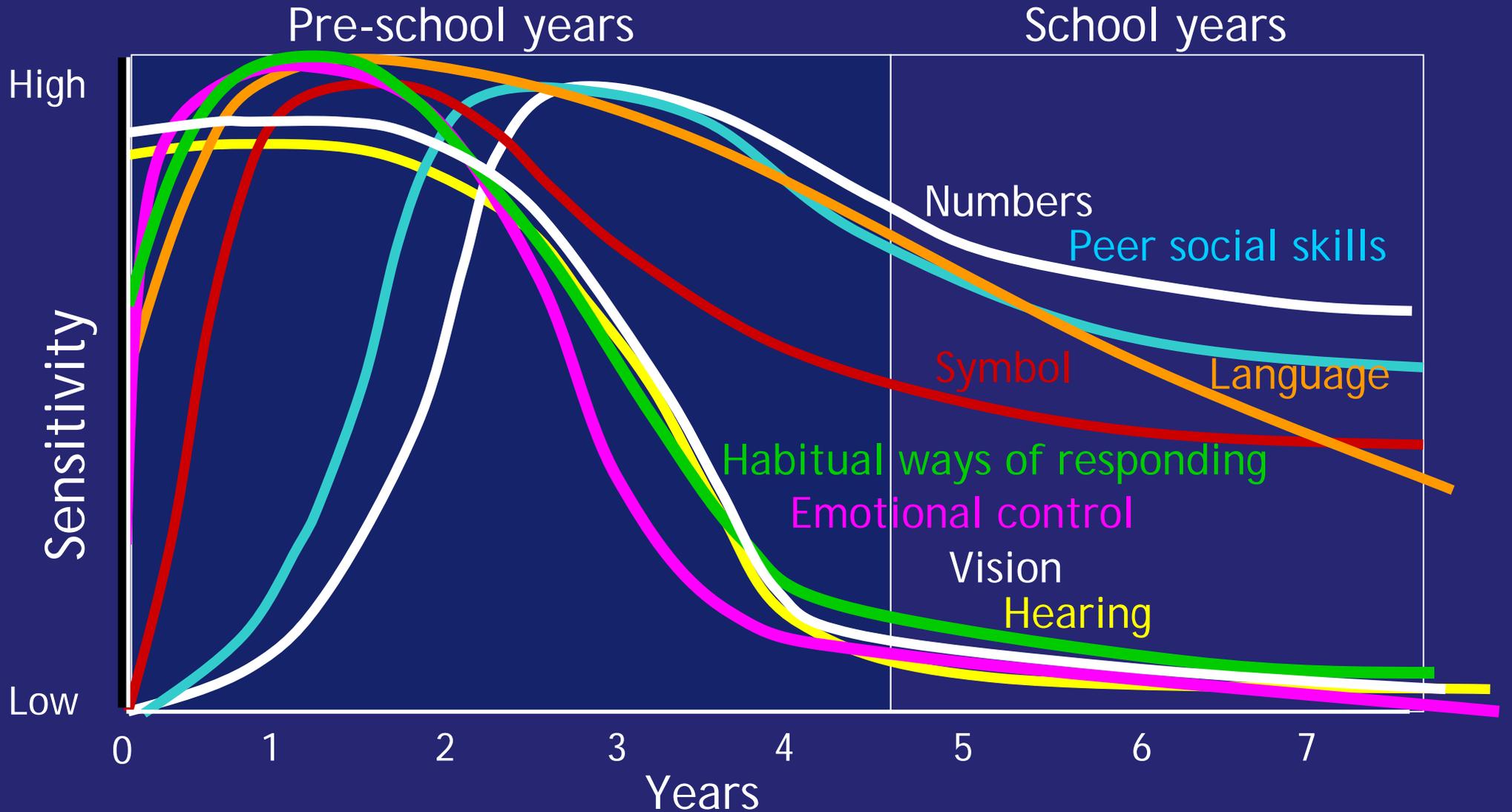


## SUCCESS accumulates in four ways

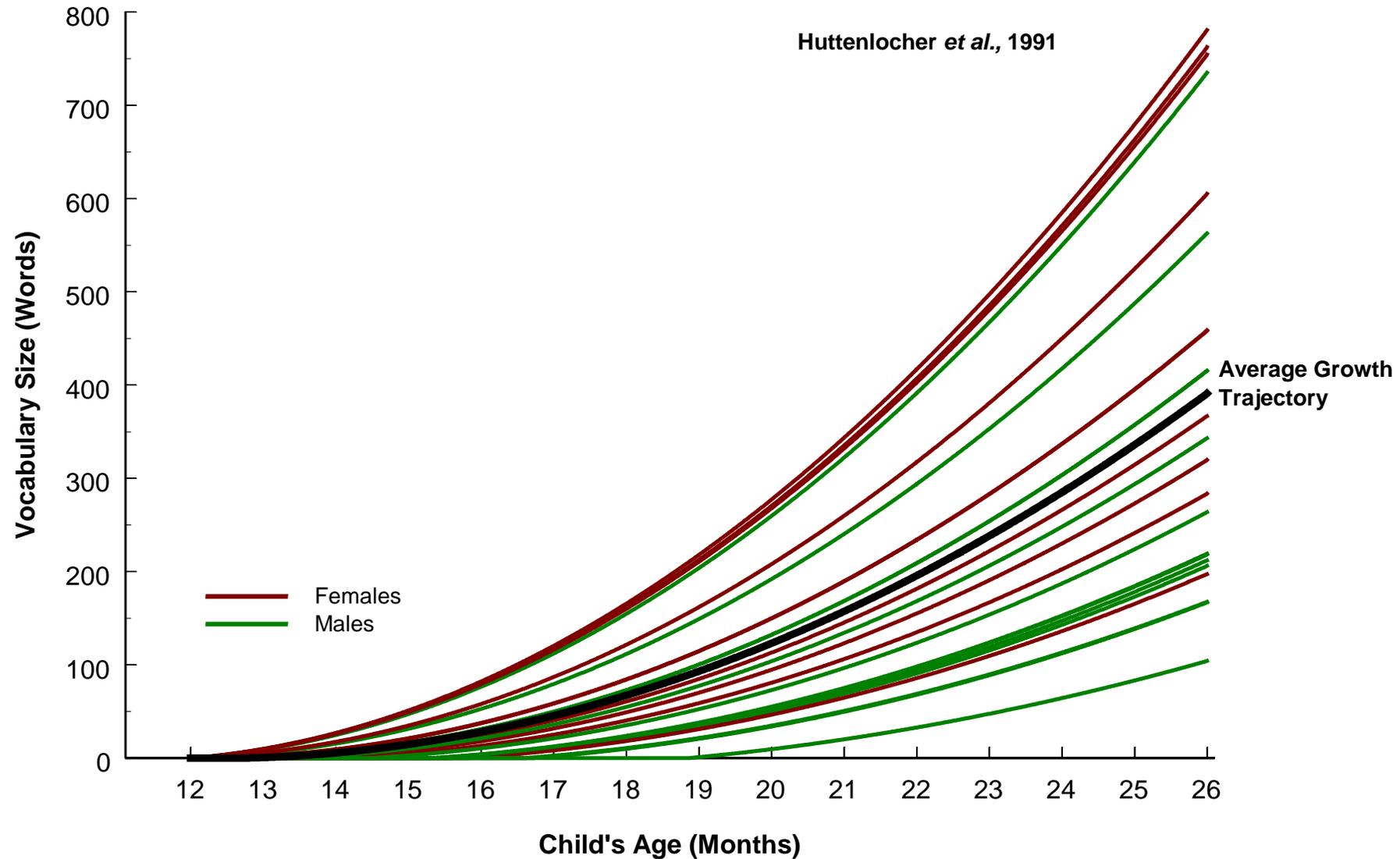
1. Biological embedding
2. Foundations for success
3. Cumulative effects
4. Selection



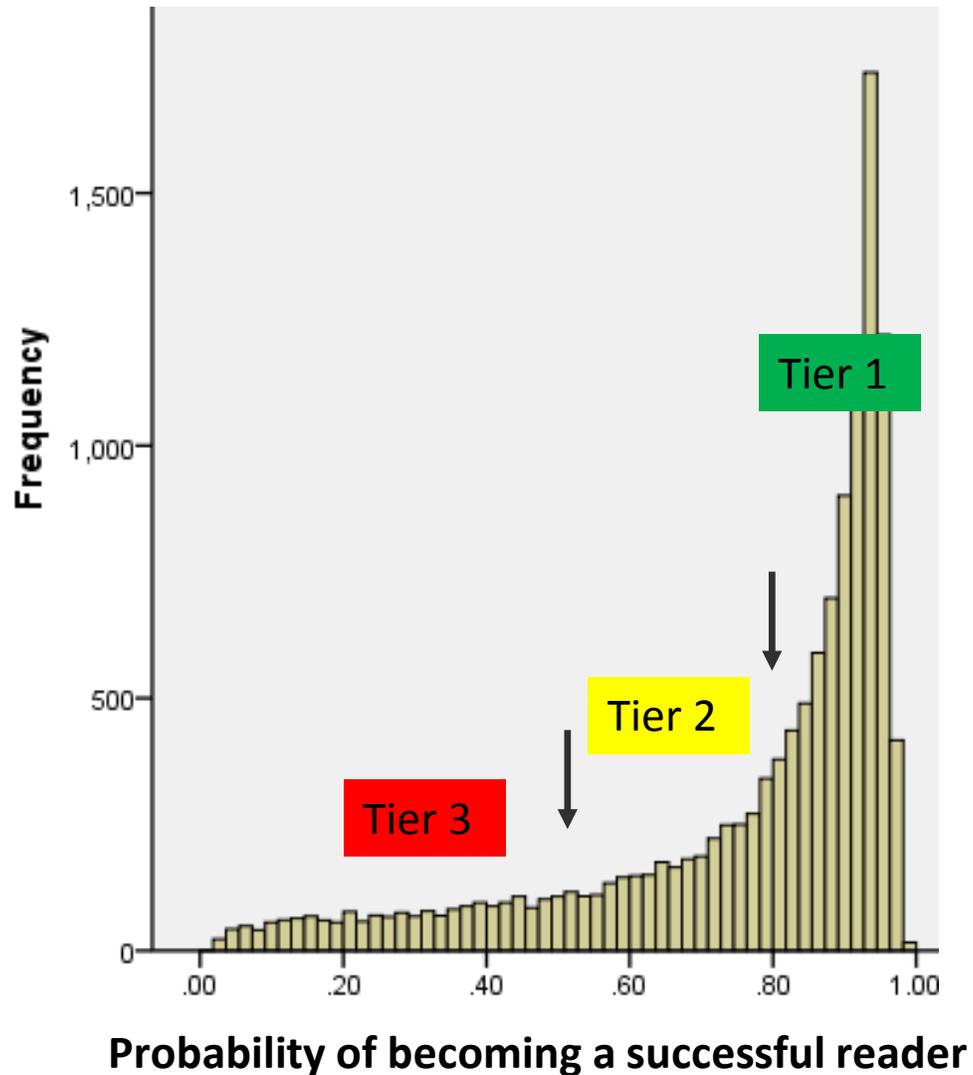
# Sensitive Periods in Early Brain Development



# Children develop at markedly different rates during the early years



# A four year range of skills when children enter Grade 1



**Responsive Tiered  
Instruction based on**

**The Early Years Evaluation:  
An early warning system**

[www.earlyyearesevaluation.com](http://www.earlyyearesevaluation.com)



# Traversing the Reading Mountain



## Confident Learners

### A Whole-School Literacy Program for Indigenous On-Reserve Schools

Developed by the Canadian Research Institute for Social Policy and The Learning Bar in partnership with 32 First Nations.

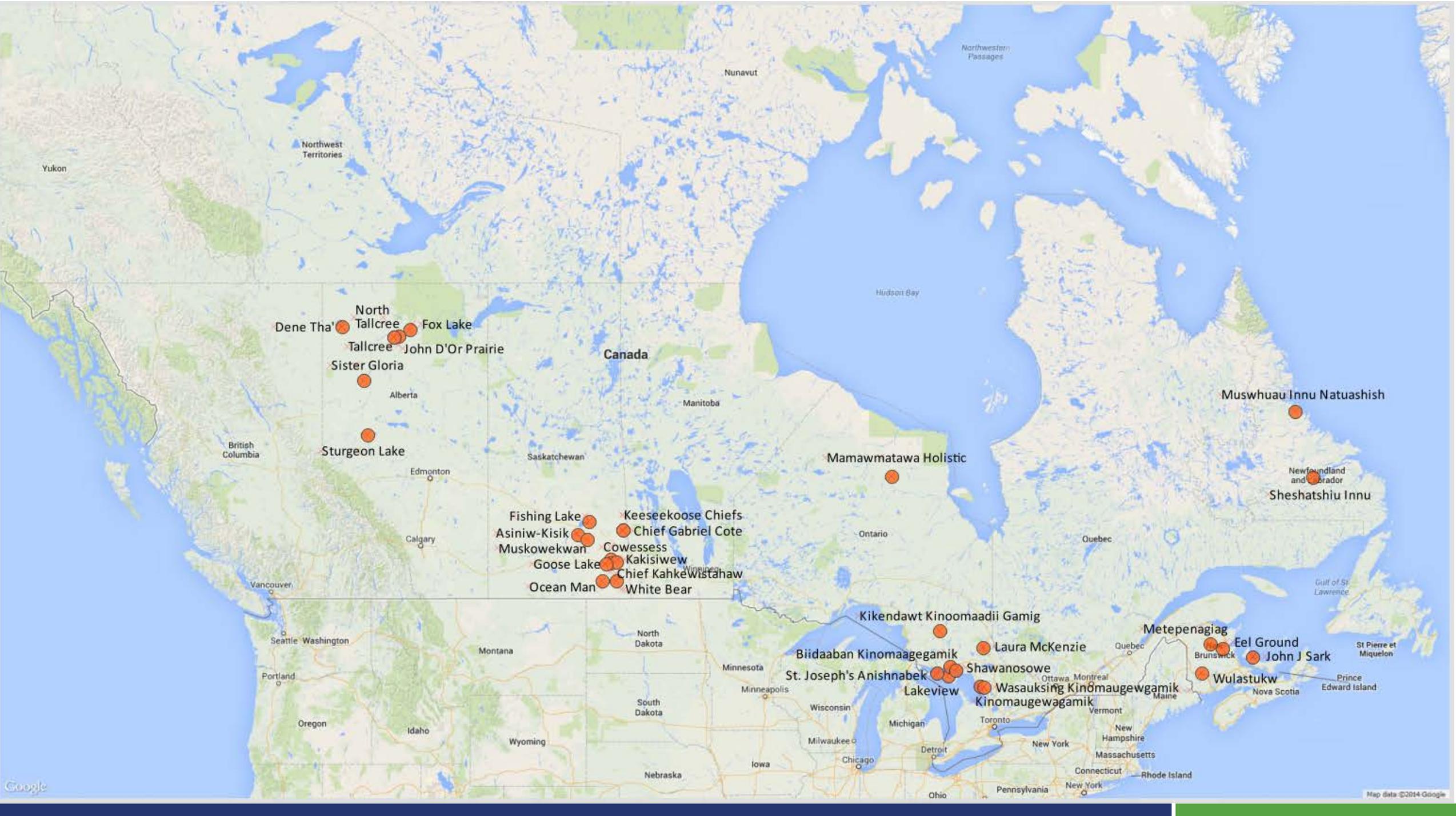
Funded by Indigenous and Northern Affairs Canada



# Traversing the Reading Mountain

Confident Learners is an initiative that brings to bear the **science of learning how to read**, a **rigorous curriculum** aligned with **teaching activities** and **assessments**, quality **professional development**, and the support of **communities and families** to ensure Indigenous children become fluent readers.





Dene Tha'  
North Tallcree  
Tallcree  
Sister Gloria  
Sturgeon Lake

Fishing Lake  
Asiniw-Kisik  
Muskowekwan  
Goose Lake  
Ocean Man  
Keeseekoose Chiefs  
Chief Gabriel Cote  
Cowessess  
Kakisiwew  
Chief Kahkewistahaw  
White Bear

Mamawmatawa Holistic

Muswhuau Innu Natuashish  
Sheshatshiu Innu

Kikendawt Kinoomaadii Gamig  
Biidaaban Kinomaagegamik  
St. Joseph's Anishnabek  
Lakeview  
Laura McKenzie  
Shawanosowe  
Wasauksing Kinomaugewgamik  
Kinomaugewgamik  
Metepenagiag  
Eel Ground  
John J Sark  
Wulastukw

# Traversing the Reading Mountain



## The simple view of reading

**'The simple view of reading'** (Rose, 2006) has two critical, complementary dimensions:

- ***Code-related skills*** – the ability to 'decode' (sound out) and recognize particular words, and
- ***Language skills*** – being able to understand and interpret spoken and written language.

# Traversing the Reading Mountain

## Code-Related Skills

Concepts  
About  
Print

Phonological  
Awareness

Letter  
Knowledge

Reading Fluency

Supra-  
Phonemic  
Awareness  
(Large Units)

Phonemic  
Awareness  
(Small units)

Accuracy:  
Word  
Decoding  
and Spelling

Accuracy:  
Word  
Recognition  
and Spelling

Speed  
and  
Prosody



# Traversing the Reading Mountain

14	1	1	2	2	4	5	6	1	3	5	8	10	12	14	17	19	21	23	25	27
13	5	17	1	7	3	4	5	8	2	4	7	9	11	13	16	18	20	22	24	26
12	4	16	28	6	13	3	15	7	10	16	6	24	26	32	15	42	50	58	66	78
11	3	15	27	5	12	20	14	25	9	15	18	23	25	31	36	41	49	57	65	77
10	2	14	26	4	11	19	13	24	31	14	17	22	56	30	35	40	48	56	64	76
9	1	13	25	3	10	18	12	23	30	13	44	21	55	29	34	39	47	55	63	75
8	8	12	24	2	9	17	11	22	29	12	43	20	54	28	33	38	46	54	62	74
7	7	11	23	34	8	16	10	21	28	11	42	19	53	27	68	37	45	53	61	73
6	6	10	22	33	39	15	9	20	27	35	41	48	52	62	67	74	44	52	60	72
5	5	9	21	32	38	14	8	19	26	34	40	47	51	61	66	73	43	51	59	71
4	4	8	20	31	37	43	7	18	22	33	39	46	50	60	65	72	78	82	86	70
3	3	7	19	30	36	42	6	17	16	32	38	45	49	59	64	71	77	81	85	69
2	2	6	18	29	35	41	21	16	15	23	37	19	21	58	63	70	76	80	84	68
1	1	9	10	11	12	40	44	13	14	17	36	18	20	57	22	69	75	79	83	67
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20

<b>Code-Related Skills</b>	Concepts about print	22
	Phonological Awareness – Supra-Phonemic Awareness	25
	Phonological Awareness – Phonemic Awareness	19
	Letter Knowledge	23
	Fluency – Word Decoding and Spelling	86
	Fluency – Word Recognition and Spelling	78
	Fluency – Speed & Prosody	27

# Traversing the Reading Mountain

## Language Skills

Vocabulary

Receptive  
Language

Expressive  
Language

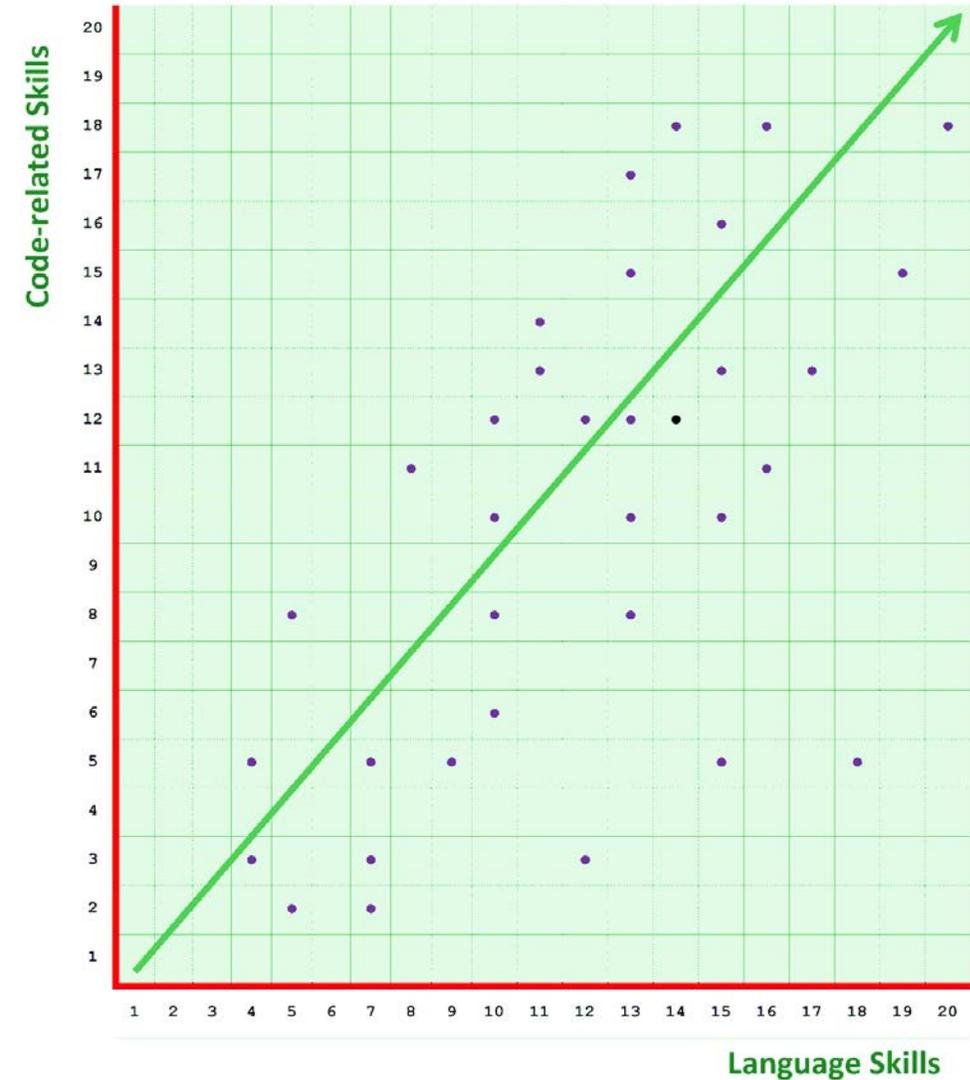
Written  
Language

# Traversing the Reading Mountain

14	5	10	15	20	22	27	32	36	41	44	2	5	12	17	27	32	39	44	50	57
13	4	9	14	19	21	26	31	35	40	43	1	4	11	16	26	31	38	43	49	56
12	3	8	13	18	22	25	30	34	39	42	49	3	10	15	25	30	37	42	48	55
11	2	7	12	17	21	24	29	33	38	40	48	54	9	14	24	29	36	41	47	54
10	1	6	11	16	20	23	28	33	37	39	47	53	8	13	23	28	35	40	46	53
9	5	10	13	18	19	26	29	32	36	38	46	52	7	57	22	58	34	60	45	52
8	4	9	12	17	26	25	28	31	35	37	45	51	6	56	21	46	33	48	61	51
7	3	8	11	16	25	24	27	30	34	56	41	50	55	78	20	45	59	100	50	63
6	2	7	14	15	24	23	37	43	49	55	62	42	44	77	19	88	47	99	49	62
5	1	6	13	14	23	31	36	42	48	54	61	67	43	76	18	87	93	98	105	110
4	4	8	12	18	22	30	35	41	47	53	60	66	71	75	82	86	92	97	104	109
3	3	7	11	17	21	29	34	40	46	52	59	65	70	74	81	85	91	96	103	108
2	2	6	10	16	20	28	33	39	45	51	58	64	69	73	80	84	90	95	102	107
1	1	5	9	15	19	27	32	38	44	50	57	63	68	72	79	83	89	94	101	106
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20

<b>Language Skills</b>	Vocabulary	110
	Receptive Language	50
	Expressive Language	63
	Written Language	57

# The Literacy Pathway

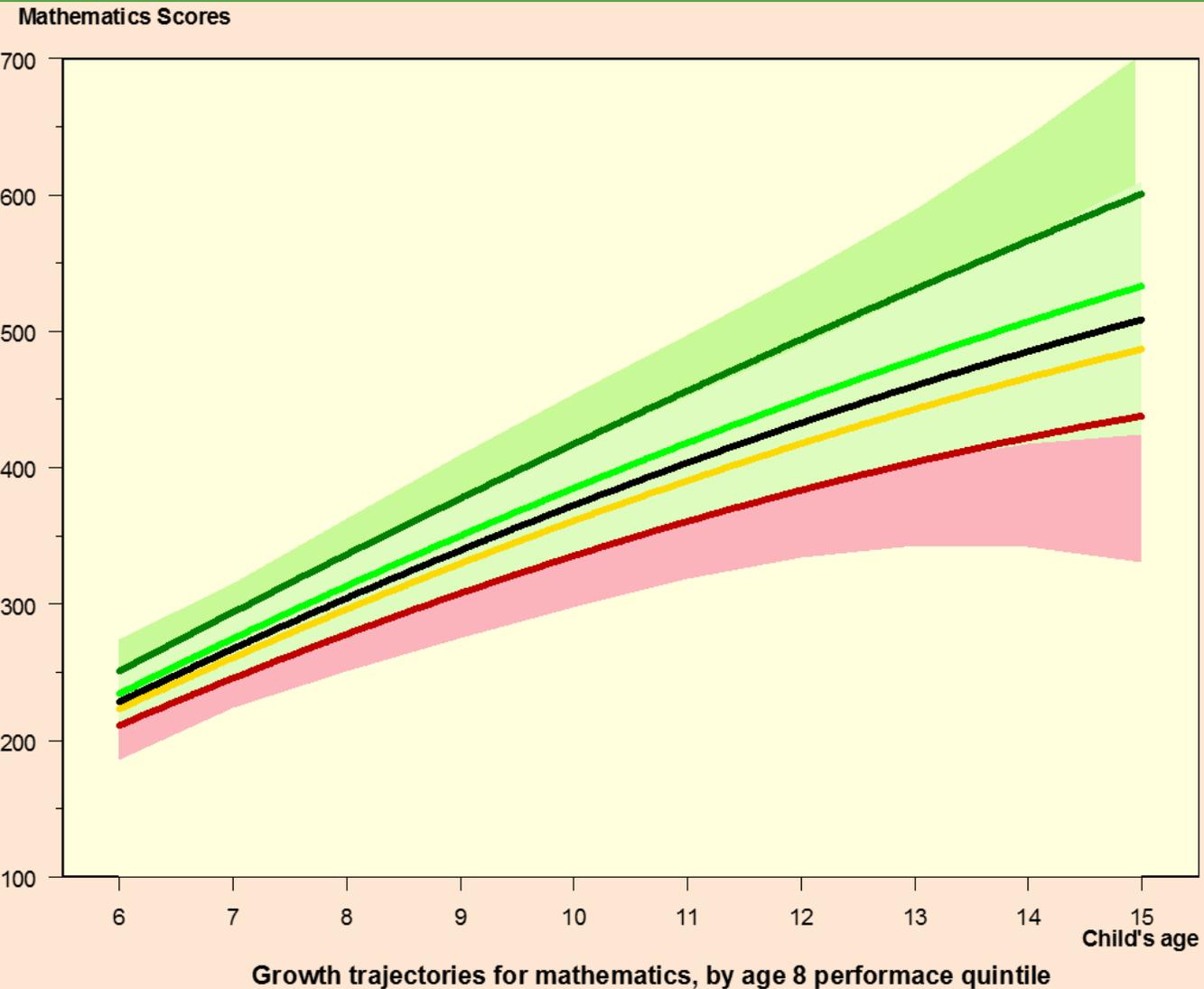


The development of Confident Learners entailed an examination of the coding and language skills that are taught in several national, state and provincial curricula. The research identified the most important skills and the sequence in which they are taught.

The skills were grouped into 20 steps for coding and 20 steps for language, with each step comprising 14 objectives.

The Literacy Pathway is a simple graph of coding skills versus language skills.

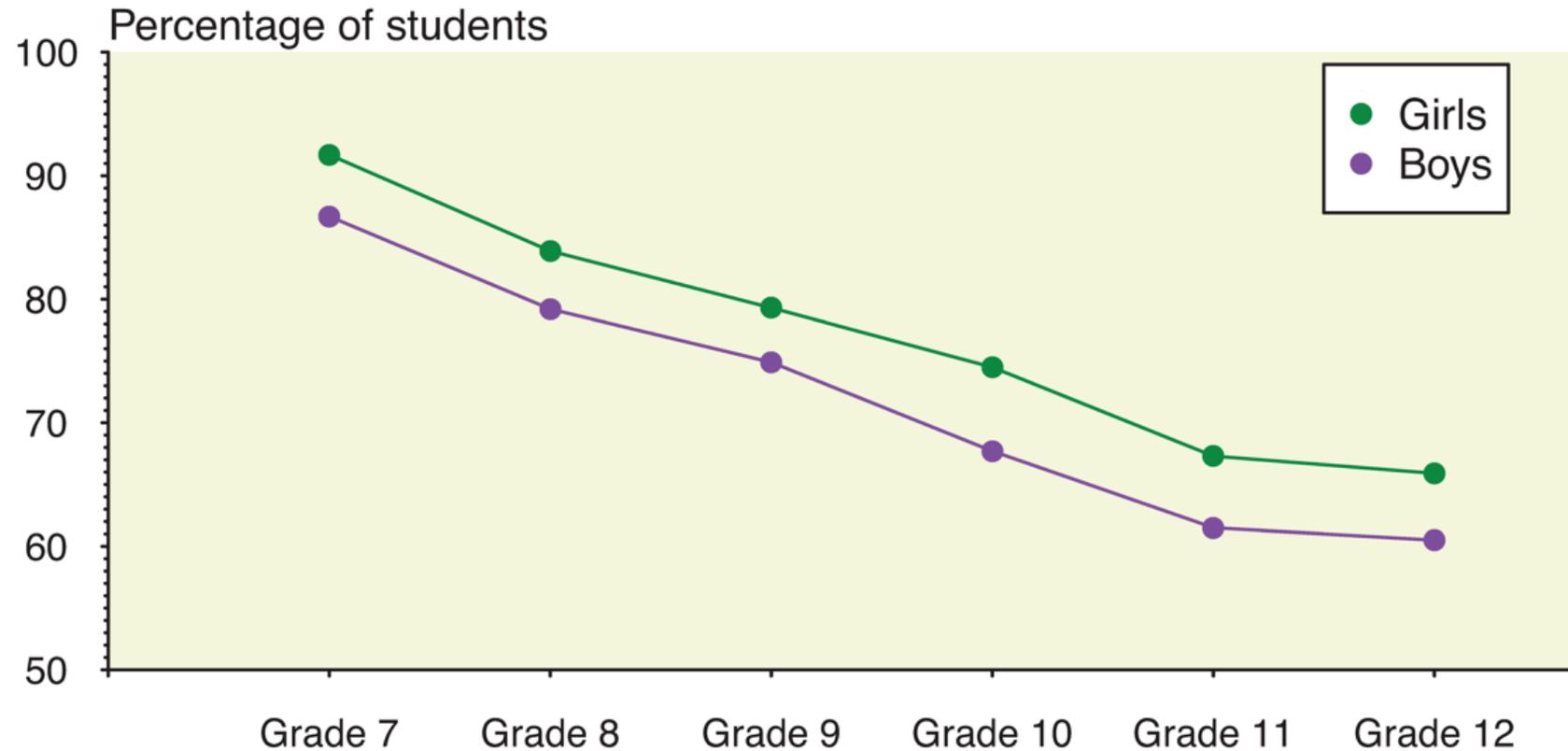
# Failure to thrive



Children who have not become successful readers by age 8 or 9 have flat growth trajectories throughout their school career.

# Failure to thrive

## Values Schooling Outcomes



Students become less motivated, exert less effort, and devalue schooling outcomes during early and late secondary school.

# Equality and Equity



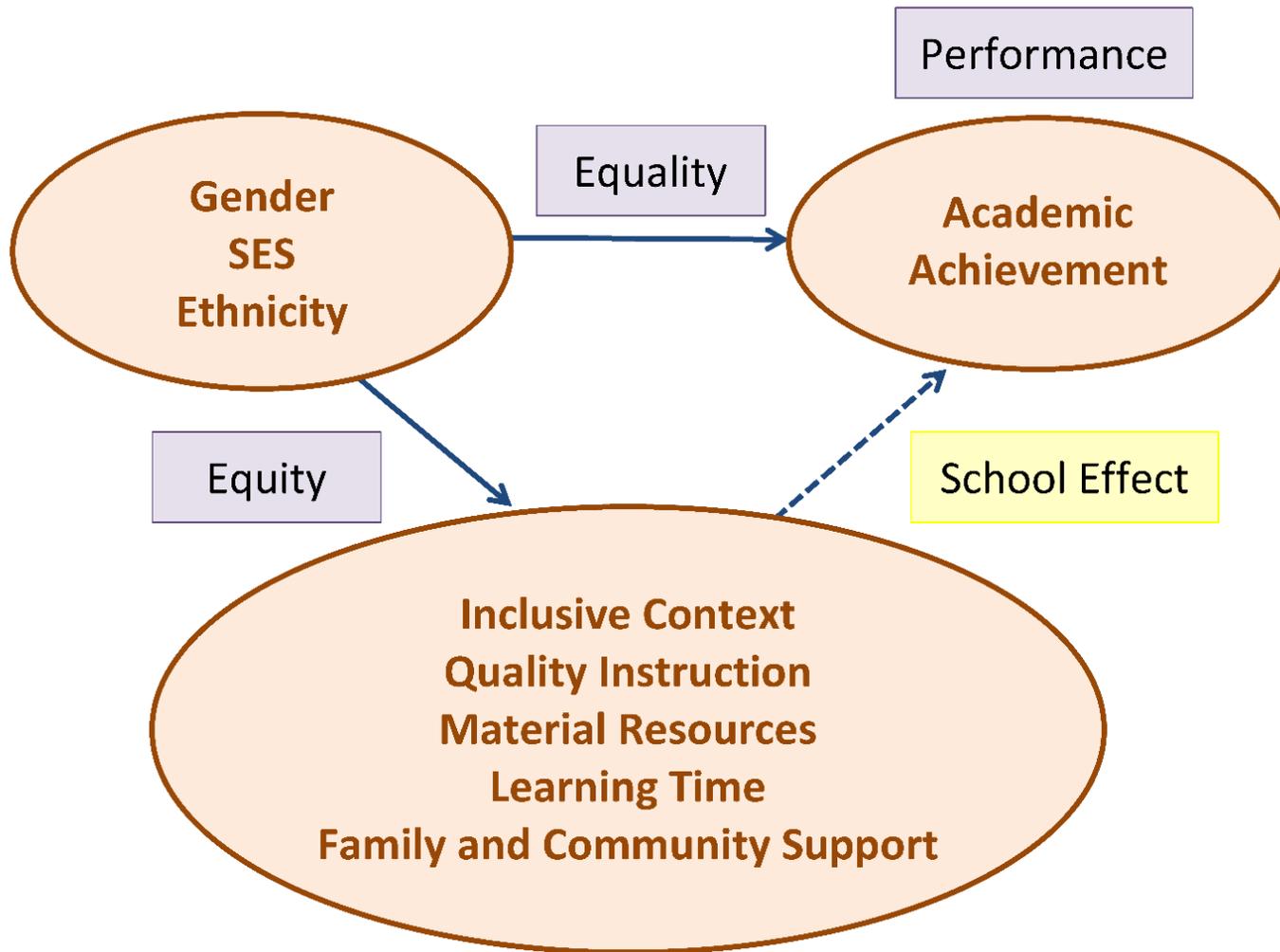
*Equality* refers to differences in the distribution of outcomes among sub-populations, especially between high- and low-status groups.

# Equality and Equity



*Equity* refers fairness – a just treatment of people from different sub-populations

# Equality and Equity



*Educational Prosperity* sets out an explicit model for monitoring quality, equality and equity with valid and reliable indicators

# Equality and Equity

**Table 4-2. Equality of Prosperity Outcomes for Aboriginal versus non-Aboriginal Students**

	Elementary Grades 4- 6			Secondary Grades 7 - 12		
	Aboriginal	Non- Aboriginal	RR	Aboriginal	Non- Aboriginal	RR
<b>Educational Attainment</b>						
Values Schooling Outcomes	92%	95%	1.50	60%	70%	1.34
Aspirations to Attend Post-Secondary				62%	77%	1.63
<b>Health and Well-Being</b>						
Engaged in Physical Activity	87%	87%	1.07	69%	66%	0.90
Positive Behaviour	83%	83%	1.68	77%	93%	3.31
Positive Mental Health	74%	82%	1.44	69%	79%	1.49
Self Esteem				65%	75%	1.37
Appropriately Challenged	35%	38%	1.06	55%	66%	1.34

*Equality for Indigenous students based on the OurSCHOOL survey.*

# Equality and Equity

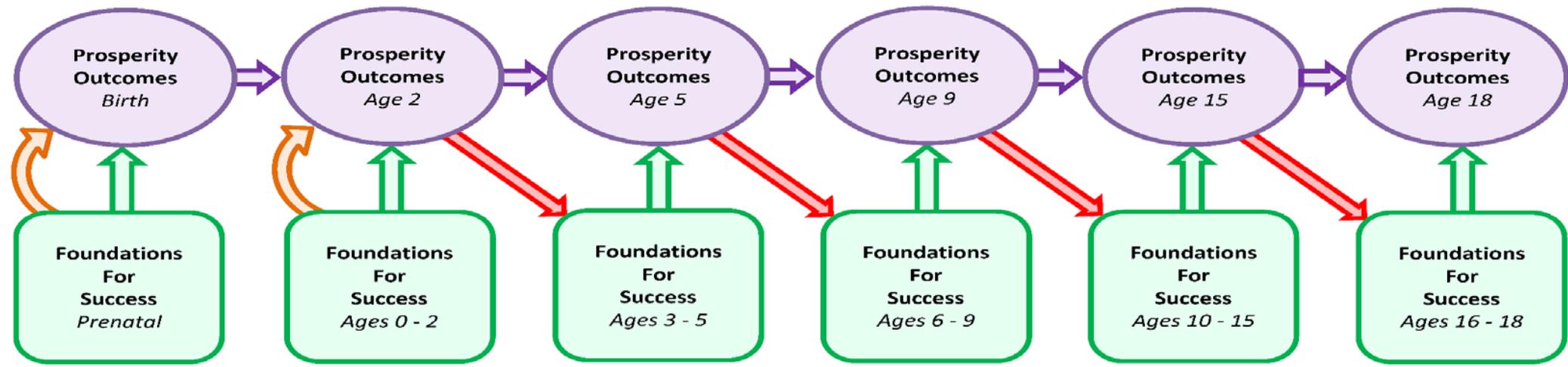
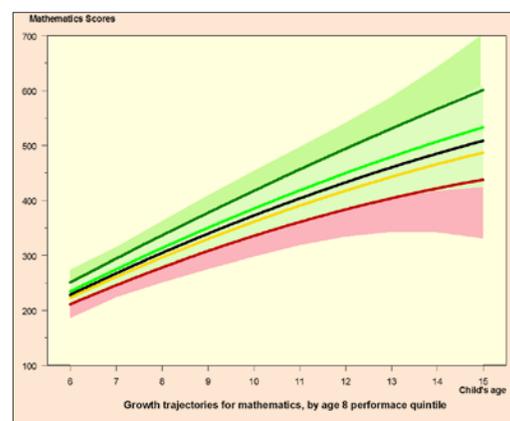
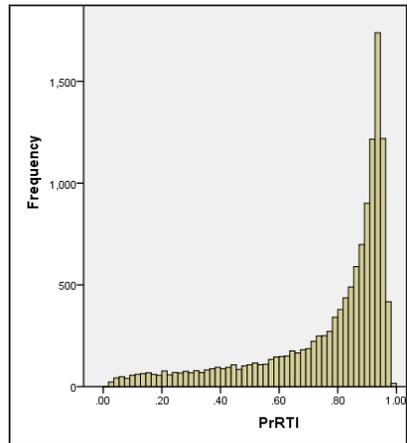
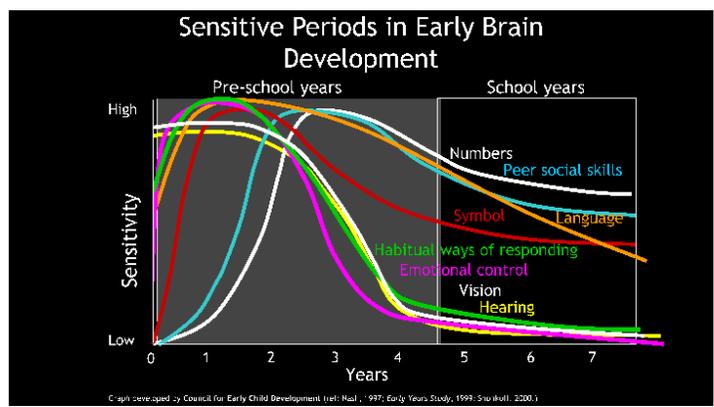
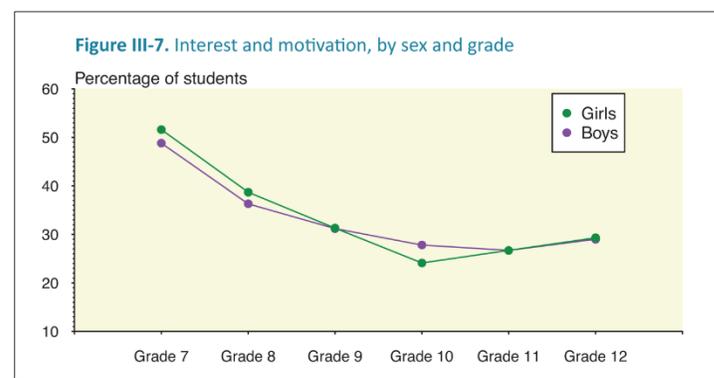
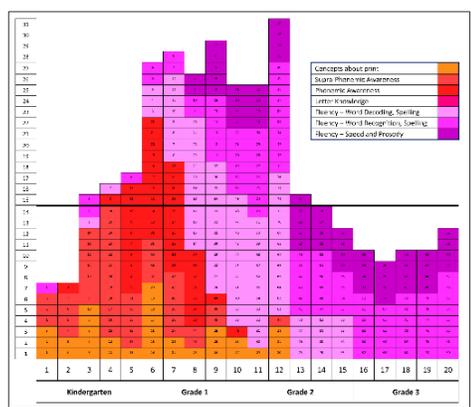
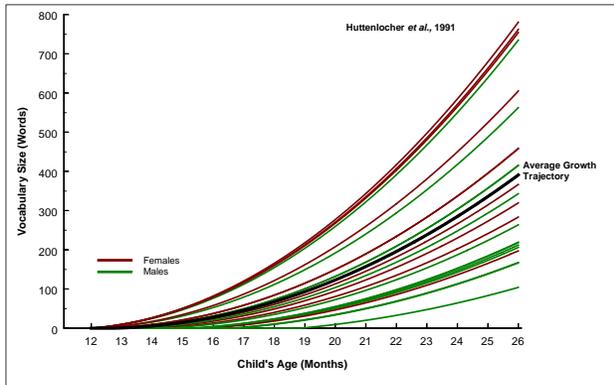
Table 4-5. Equity for the Foundations for Success for Aboriginal versus non-Aboriginal Students

	Elementary Grades 4- 6			Secondary Grades 7 - 12		
	Aboriginal	Non- Aboriginal	RR	Aboriginal	Non- Aboriginal	RR
<b>Inclusive Environment</b>						
<b>Inclusion Composite</b>	48%	62%	1.38	49%	68%	1.59
Sense of Belonging	74%	81%	1.40	57%	69%	1.42
Participation in Sports and Clubs	82%	85%	1.21	60%	63%	1.09
Positive Friendships	80%	88%	1.64	67%	79%	1.57
Not Bullied	43%	57%	1.31	70%	85%	1.99
School Safety	57%	67%	1.33	51%	69%	1.60

*Equity for Indigenous students based on the OurSCHOOL survey.*

Table 4-5. Equity for the Foundations for Success for Aboriginal versus non-Aboriginal Students

	Elementary Grades 4- 6			Secondary Grades 7 - 12		
	Aboriginal	Non- Aboriginal	RR	Aboriginal	Non- Aboriginal	RR
<b>Quality Instruction</b>						
<b>Quality Instruction Composite</b>	87%	91%	1.53	57%	66%	1.26
High-yield Teaching Strategies	91%	93%	1.28	57%	64%	1.20
Effective Learning Time	88%	91%	1.24	62%	73%	1.40
Relevance	80%	84%	1.23	51%	60%	1.23
<b>Classroom Context Composite</b>	87%	91%	1.47	58%	71%	1.47
Teacher-student Relations	87%	91%	1.44	51%	64%	1.34
Expectations for Success	93%	96%	1.87	69%	84%	1.97
Positive Learning Climate	70%	75%	1.18	49%	61%	1.30
<b>Learning Time</b>						
Homework and Study Habits	78%	81%	1.20	47%	68%	1.66
Positive Attendance				72%	87%	2.06



# Childhood Vulnerability

**Can we reduce the  
prevalence of  
vulnerability by  
at least 5%?**

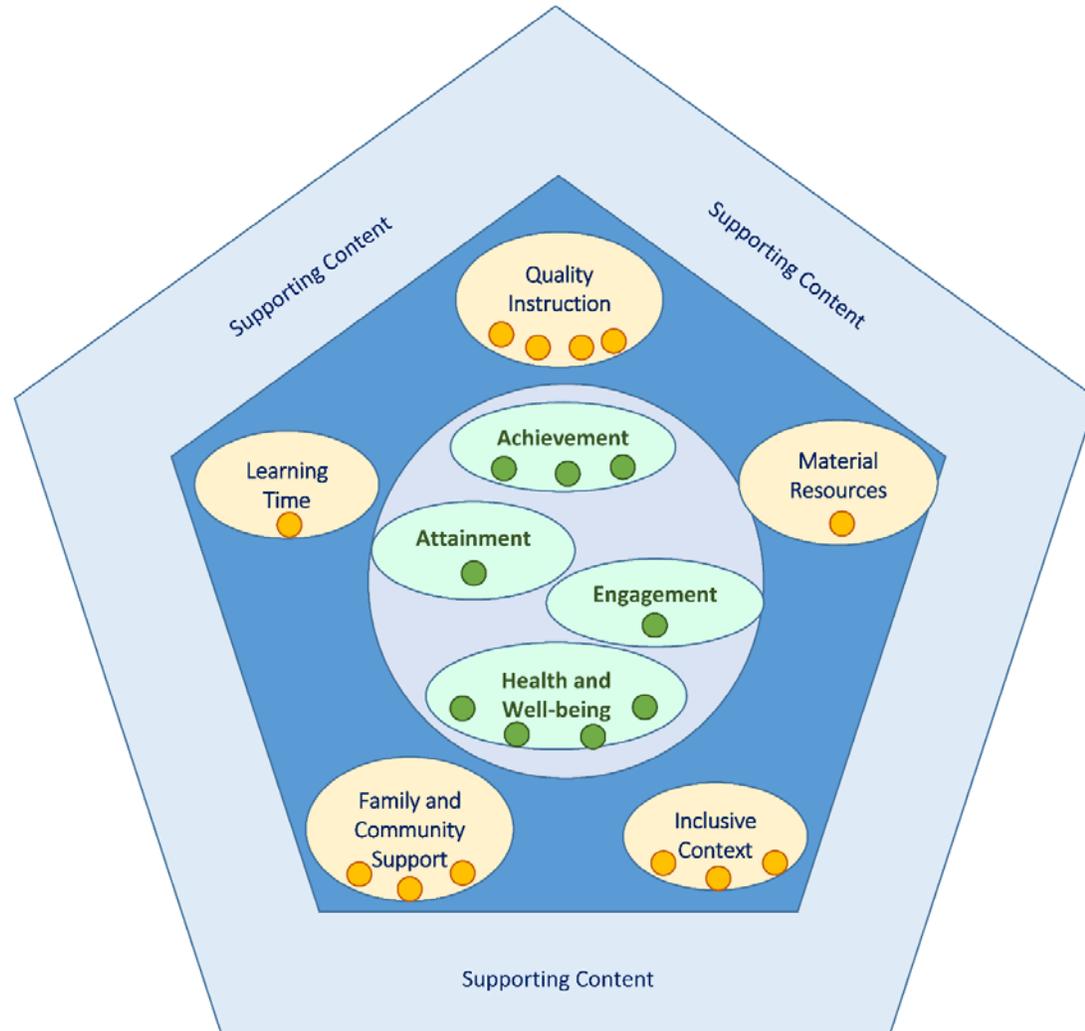


# Policies to improve educational outcomes and reduce vulnerability



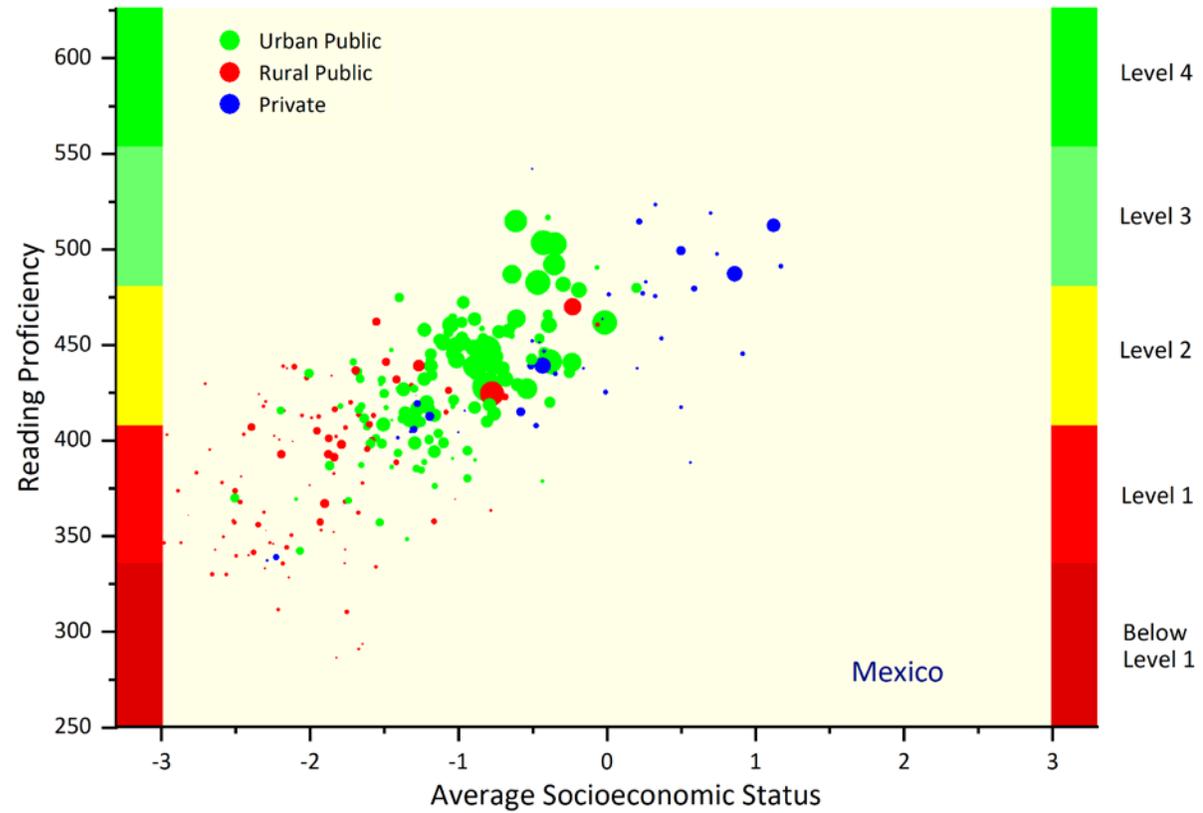
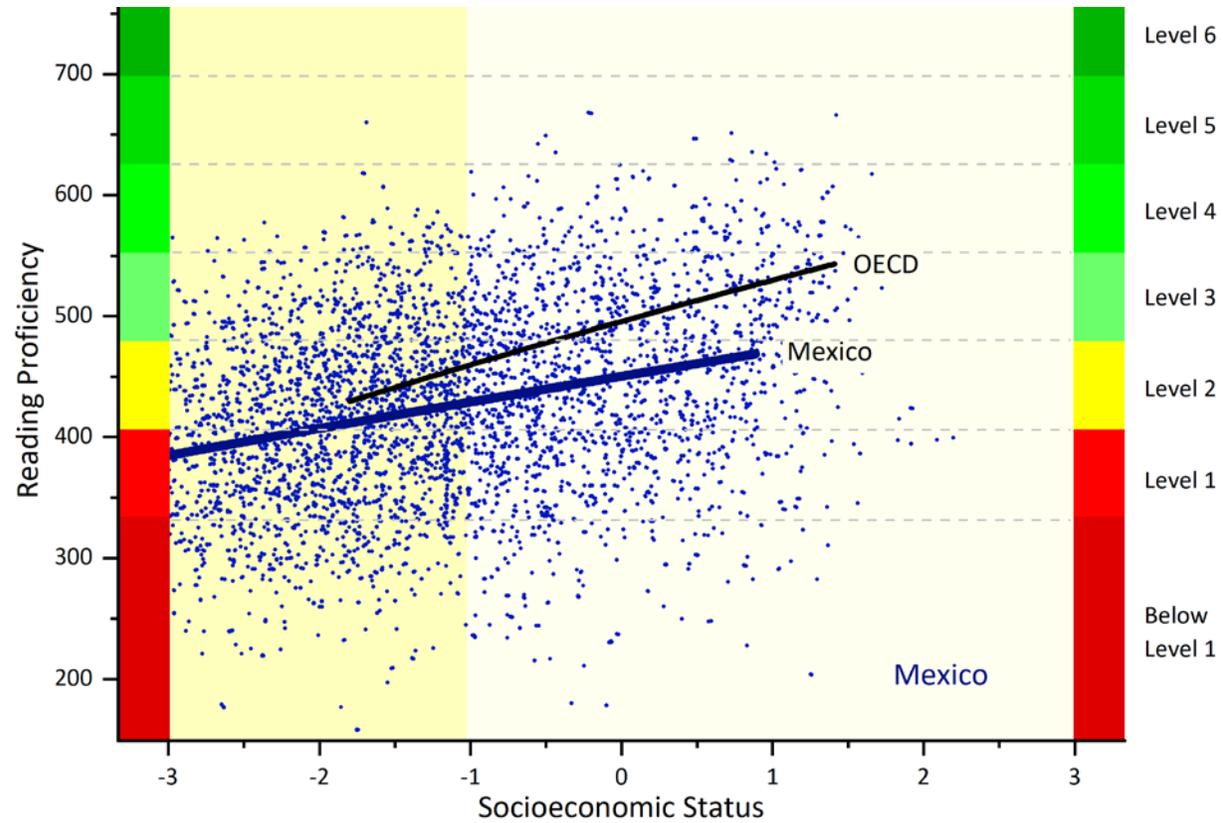
The Educational Prosperity framework provides explicit links to two types of educational policies: those concerned with improving schooling outcomes and reducing inequalities; and those pertaining to strategies for achieving educational goals.

# Maintain a relentless focus on the Foundations for Success

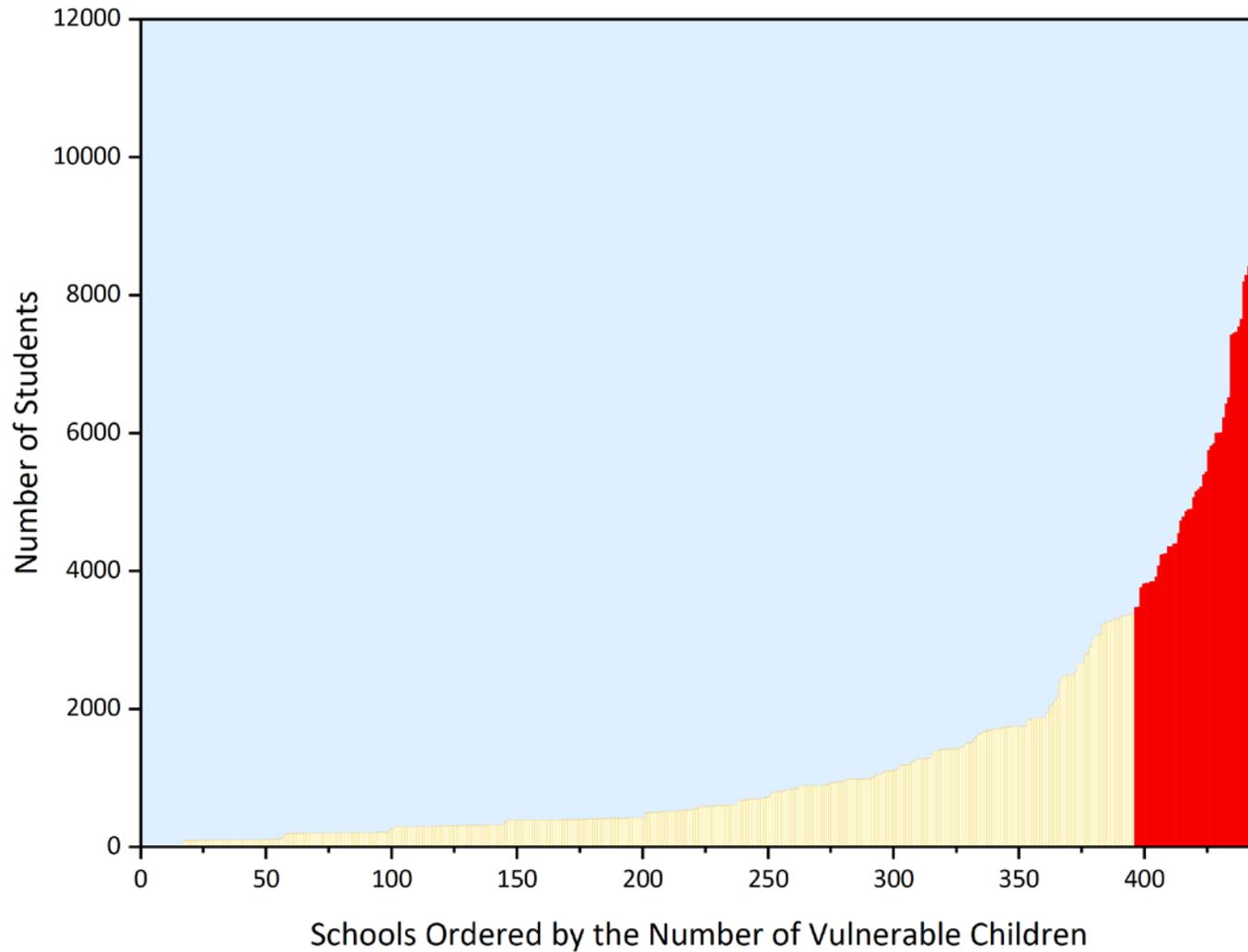


Educational Prosperity for  
PISA for Development:  
The “Minister’s Dashboard”

# Use monitoring data to provide a rich description of performance



# Use monitoring data to provide a rich description of performance



## **Vulnerability concentration plot**

An example for Mexico: 50% of the students with Level 1 or lower reading proficiency are in 11% of its schools.

# Use data to inform policies concerning allocation of resources

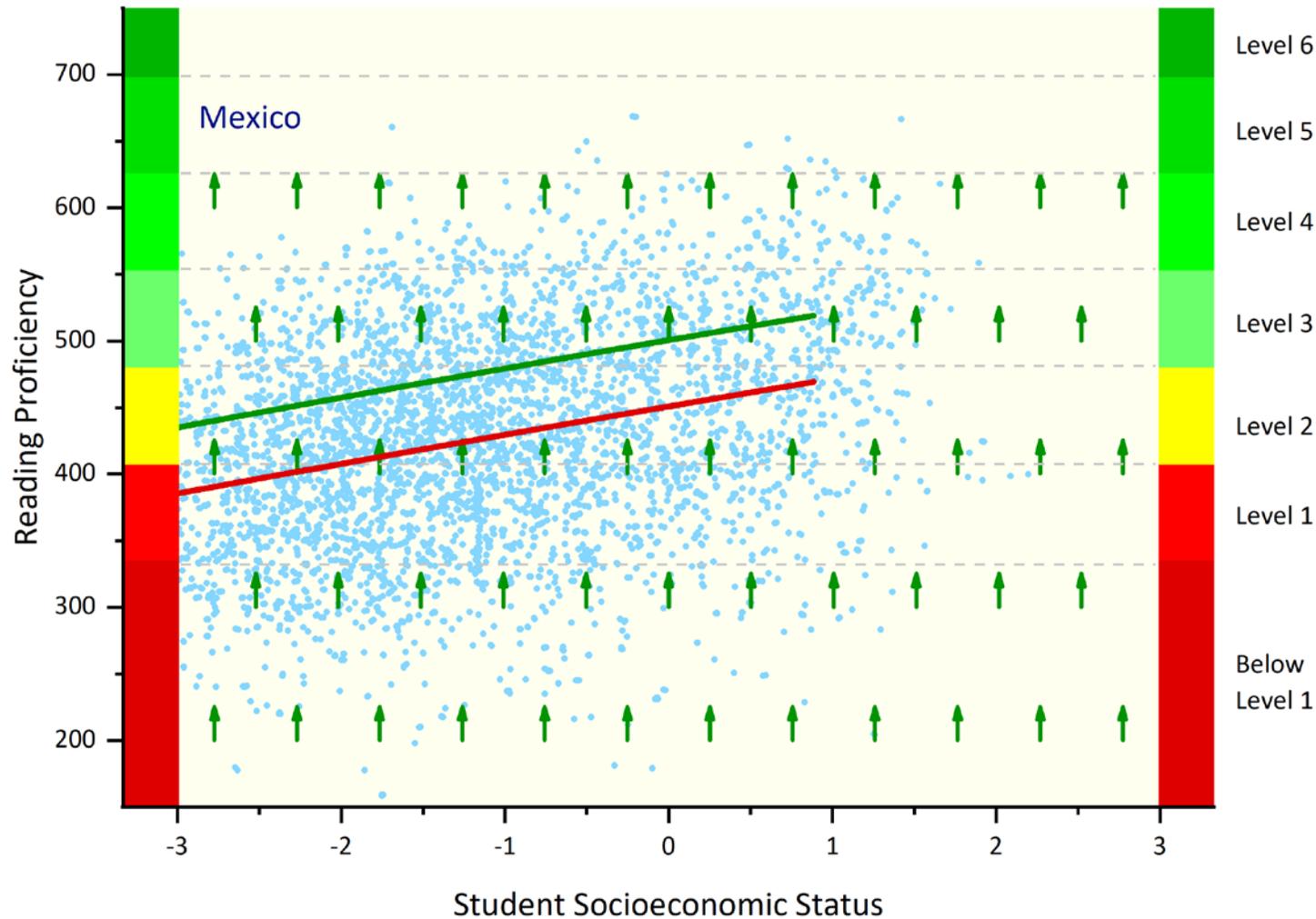


The allocation of resources, when there are many competing priorities, is perhaps the most challenging and discerning task for educational policy-makers.

Policies that aim to increase student performance and reduce inequalities often require an increase or reallocation of funding.

They could include, for example, policies concerning class size, teacher salaries, material resources for schools, special needs funding, funding for pre-service and in-service education.

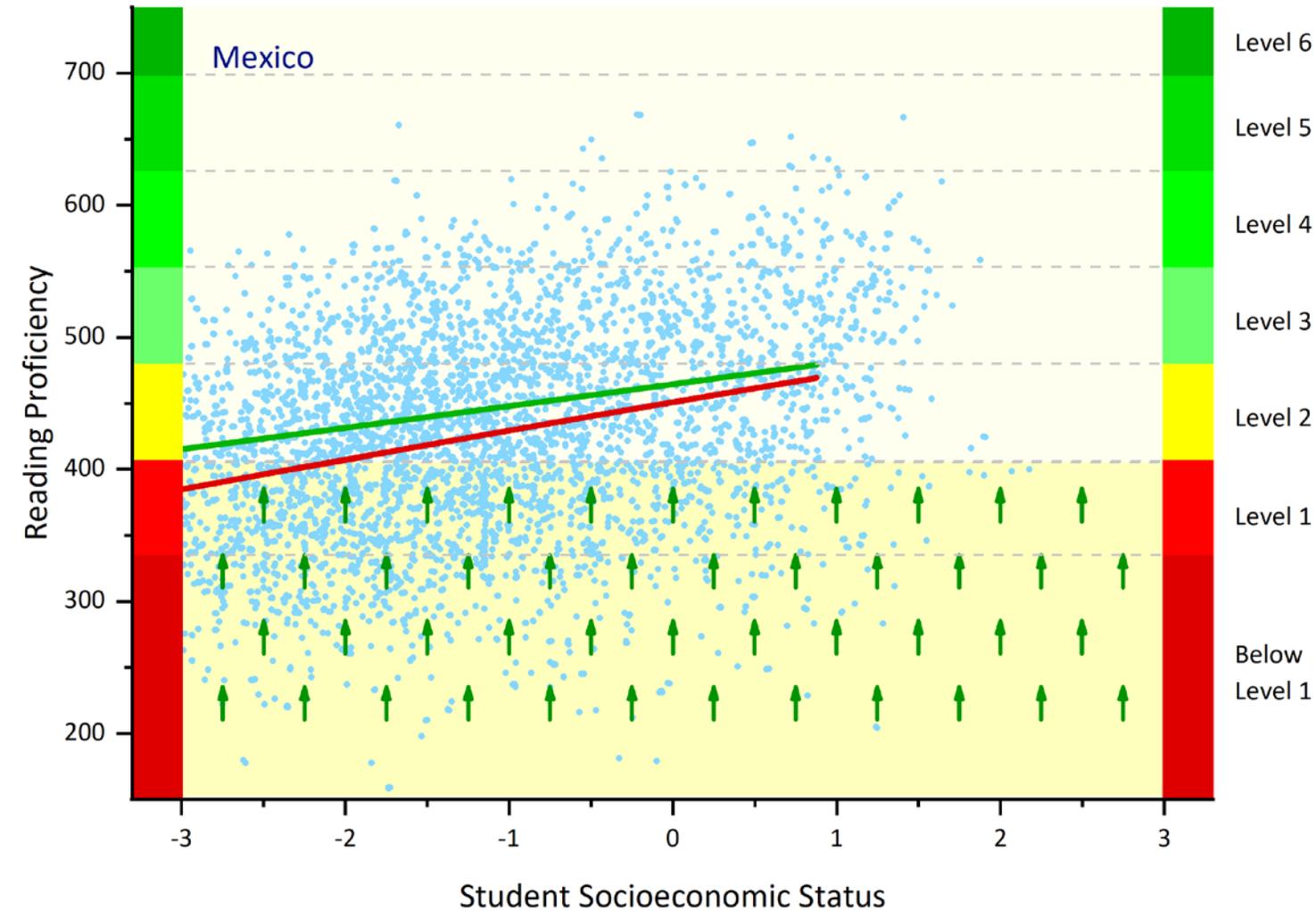
# Implement strategies informed by monitoring data



## A universal strategy

An example for Mexico for an intervention with an effect size of 0.50.

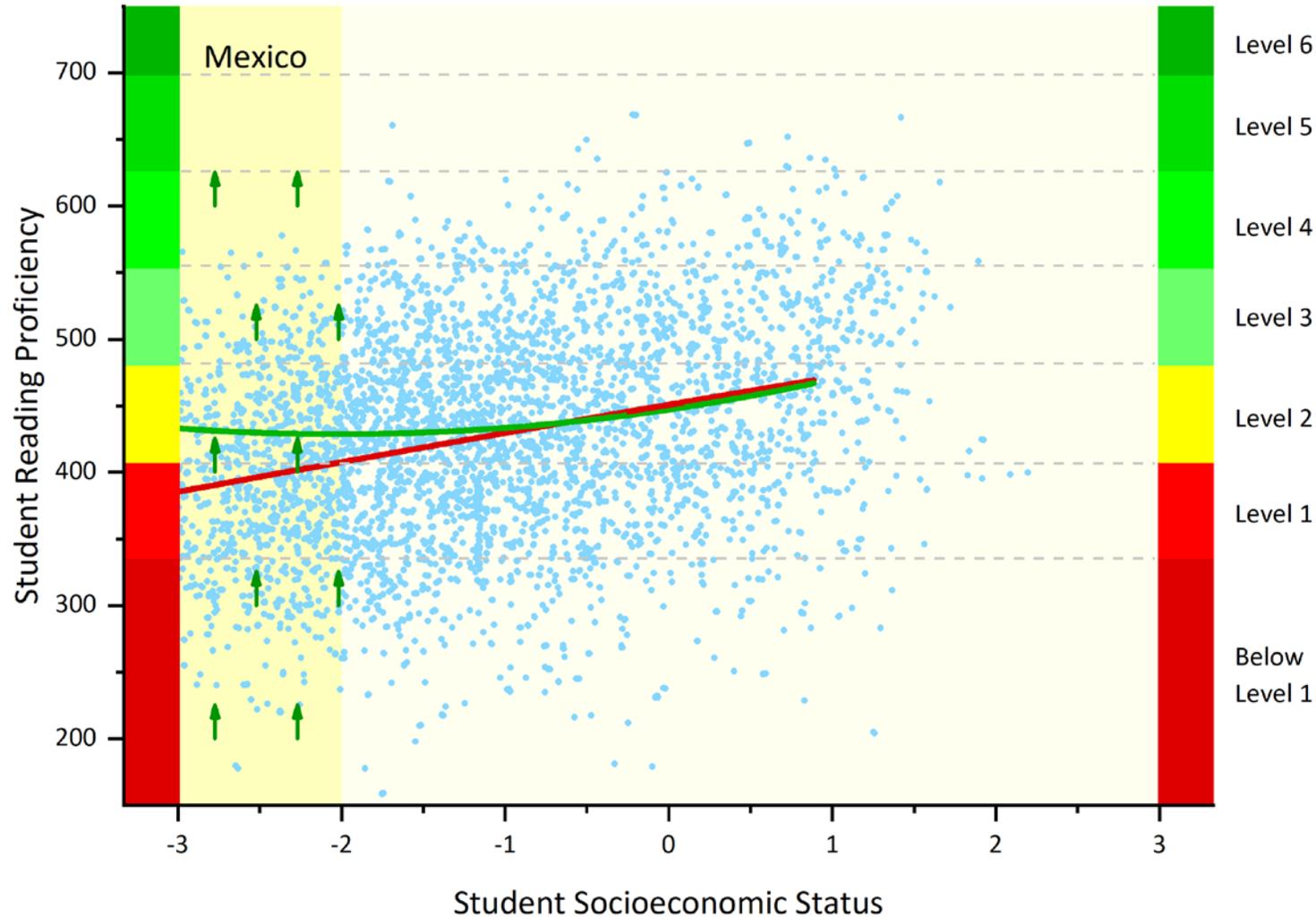
# Implement strategies informed by monitoring data



## A performance-targeted strategy

An example for Mexico for an intervention with an effect size of 0.50 for students with PISA scores at Level 1 or lower.

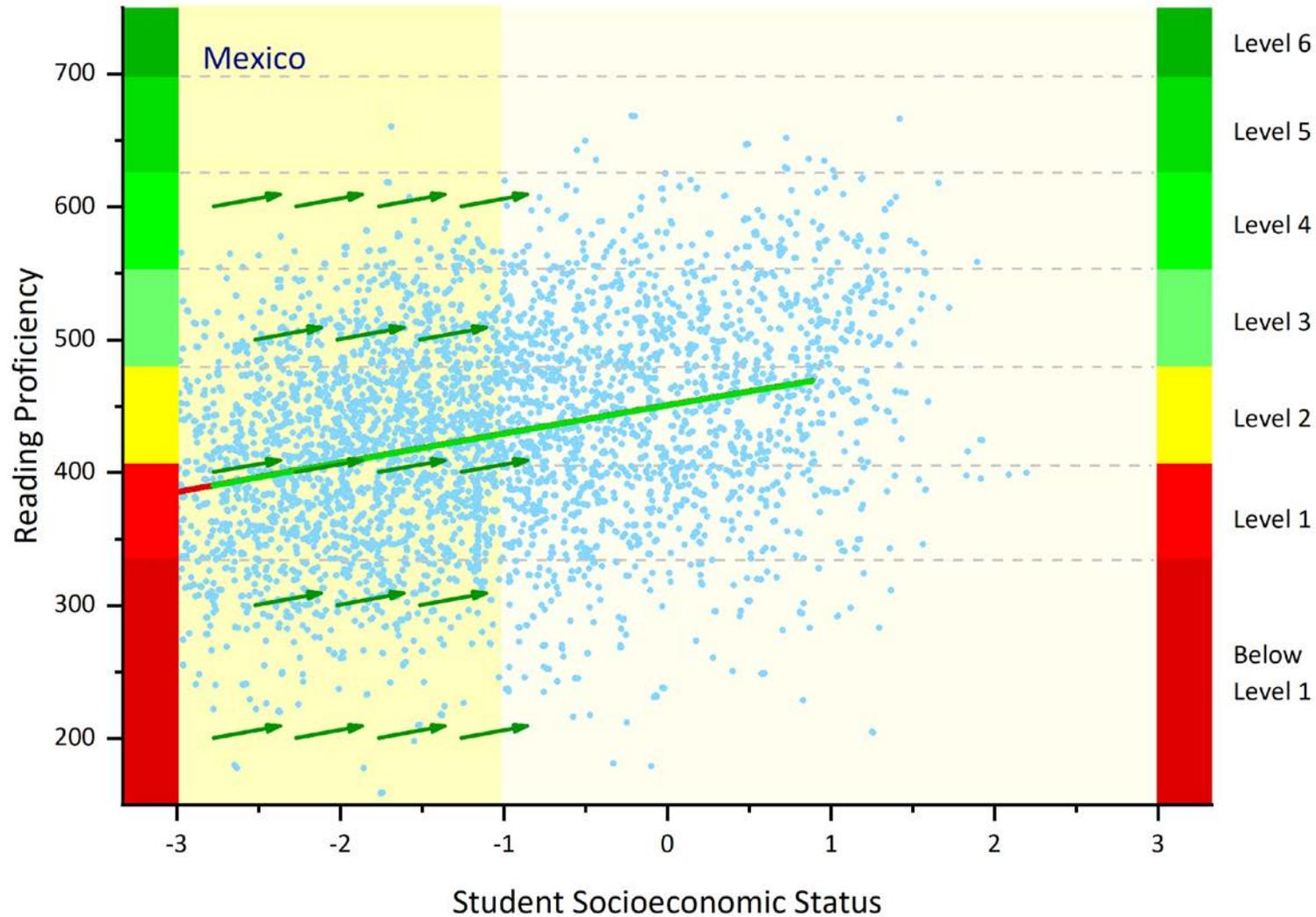
# Implement strategies informed by monitoring data



## A risk-targeted strategy

An example for Mexico for an intervention with an effect size of 0.50 for students with SES scores of -2 or lower.

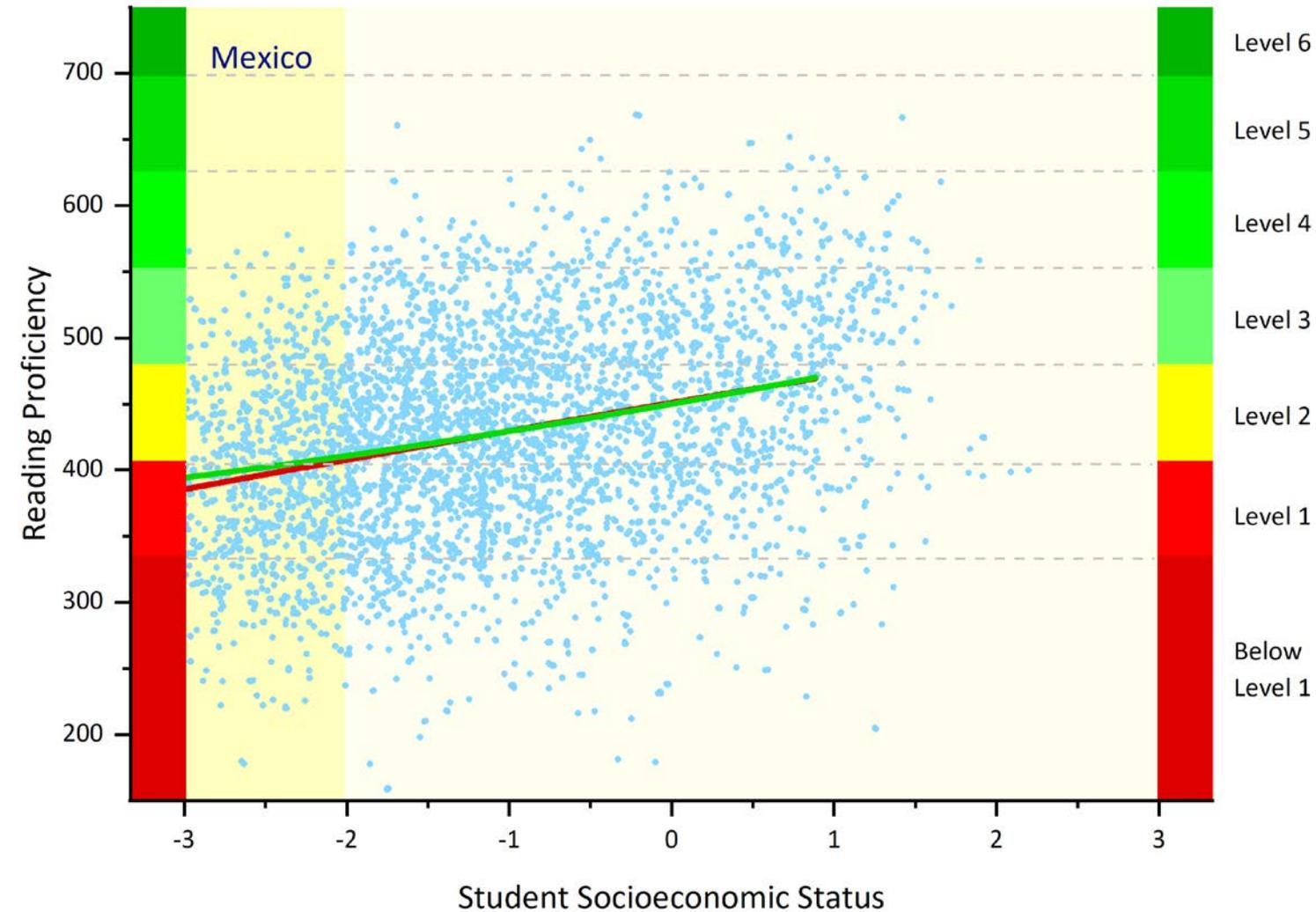
# Implement strategies informed by monitoring data



## **A compensatory strategy**

An example for Mexico for an intervention that increases the SES scores of low SES students by 0.25 standard deviations.

# Implement strategies informed by monitoring data



## A reallocation strategy

An example for Mexico for an intervention that reallocates students into mainstream schools.

# Develop an infrastructure for research

Strategies for achieving educational goals can entail changes in the structural features of the way schools are managed and instruction is delivered. For example, policies regarding grade repetition is of paramount concern in many jurisdictions. Another key policy issue concerns the inclusion of children with disabilities. Developing a new policy for either or these two structural features entails a major shift in school management and the delivery of instruction.

Other structural features that are often the subject of debate include: selective schooling, instructional time, use of technology, and parental choice of schools. Changes in the state curriculum are also included in this category.

A monitoring system based on an Educational Prosperity framework establishes an infrastructure for conducting experimental studies that can provide evidence of the effects of particular interventions and policies.





**Strong leadership**

**Dedicated teachers**

**Family and community support**

**A relentless focus on building  
the foundations for success**

# Thank You!

For further information please contact:

[inquiry@thelearningbar.com](mailto:inquiry@thelearningbar.com)

1-877-840-2424

**Willms, J. D. (2018). *Learning Divides: Using Monitoring Data to Inform Education Policy*. Montreal: UNESCO Institute for Statistics.**

<http://uis.unesco.org/sites/default/files/documents/ip54-learning-divides-using-data-inform-educational-policy.pdf>  
(English)

<http://uis.unesco.org/sites/default/files/documents/ip54-learning-divides-using-data-inform-educational-policy-spanish.pdf>  
(Spanish)

<http://uis.unesco.org/sites/default/files/documents/ip54-learning-divides-using-data-inform-educational-policy-french.pdf>  
(French)

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<http://uis.unesco.org/en/blog/educational-prosperity-framework-helping-countries-provide-foundational-learning-all>

<http://uis.unesco.org/en/blog/educational-prosperity-looking-beyond-equality-equity>